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“Environmental threats do not heed national borders; environmental peril overseas can pose long-term dangers to Americans’ security and well-being”[\[1\]](#)

INTRODUCTION

Former President Bill Clinton referred to the relationship with China as one that, “...will in large measure help to determine whether the new century is one of security, peace, and prosperity for the American people.” The Clinton administration further defined environmental threats as posing threats to US security and well being, as stated in the opening quote.

China has focused significant effort on economic development to improve its position as a player in the international community and to deal with its growing population. A major downside to economic development has been the resultant damage caused to the environment.

China is plagued by a number of severe environmental problems, specifically air and water pollution, that adversely affect the quality of living of its population, that impact the environments and economies of regional neighbors, and that have the potential to cause global environmental and economic degradation. Should the US be concerned about the environmental plight of China, a country thousands of miles from the United States? Does China’s internal environmental situation have an impact on US national interests, security, and prosperity? These are questions the Bush administration must consider in defining its policy towards China.

This paper will highlight China's primary environmental problems, the impact on regional neighbors and the international community, China's environmental protection program, and US environmental diplomacy toward China.

CHINA'S DOMESTIC ENVIRONMENTAL SITUATION

China's rapid economic development, burgeoning population growth, and corresponding industrialization have proven to be very costly to the environment. The demands placed on the environment have led to a myriad of environmental problems, to include air pollution, water pollution, and ecological degradation. Although the Chinese government has undertaken an ambitious program to address these concerns, at the national and international level, their success is hindered by the breadth and scope of the environmental degradation, the lack of environmentally sound technologies, the lack of ample alternate sources of energy, and the difficulties in administering and enforcing nation-wide environmental laws and regulations. The principal environmental problems include the following:

Water Pollution: China has identified three specific areas of concern with regard to its water environment: "water body pollution, water resource shortage, and flooding."^[2] All of China's major sources of water, its seven large river systems

and a number of key freshwater lakes, are contaminated at varying levels. The seven large rivers, listed in order of most-to-least polluted are: the Liaohe River (northeast China), the Haihe River (north China), the Huaihe River (central/east China), the Huang He River, the Songhuajiang River, the Pearl River (Xi Jiang delta), and the Yangtze River (see map). The Chaohu Lake (east China), Dianchi Lake (southwest China) and the Taihu Lake (east China) are the most-seriously polluted freshwater lakes. To put it more clearly, seventy-eight percent of the rivers flowing through cities are non-potable and fifty percent of the underground water is polluted.^[3] Severe nation-wide water contamination not only endangers the population, but also impacts agricultural production and sustainability of the ecological system.

Lack of adequate levels of wastewater treatment in urban areas and the overuse of pesticides and fertilizers in rural regions contribute to the contamination and limited availability of potable water. The major pollutants include, suspended particles, petroleum, ammonia nitrogen, and phosphorous.

There is great concern among environmentalists that silting from the Three Gorges Dam Project will further degrade the water environment up river of the dam, cause erosion downstream, and endanger ecological systems. China has undertaken this project in an effort to control the Yangtze River, which has been

the cause of severe flooding in the area, and to provide a source of hydroelectric power as a clean-burning energy substitute for coal.

The Three Gorges, the Qutang, Wu and Xiling, are located on the Yangtze River between the cities of Chongqing and Wuhan (see map) and cover about 120 miles of limestone cliffs. Upon completion, the dam will be “1.3 miles long and 610 feet high...(and) create a 385 mile-long reservoir...that will totally engulf the Three Gorges...115,000 acres of rich farmland, thirteen cities, hundreds of villages...”^[4]

It is the magnitude of this project that has environmentalists concerned.

A number of measures have been implemented to improve China’s water environment, from increasing wastewater treatment—approximately only 5 percent of household waste and 17 percent of industrial waste is treated—to holding industrial polluters accountable through fines and closures. Progress is slow due to the enormity of the problem, the lack of technological advances, and the difficulty in monitoring and enforcing compliance (see SEPA below for additional information.).

Air Pollution: Air pollution in China’s cities is averaging more than ten times the standard proposed by the World Health Organization.^[5] As a result, respiratory and heart diseases are the primary cause of death. Sulfur dioxide and soot, resulting from the burning of soft coal, are the two major sources of air pollution. To keep pace with its rapidly expanding population, China’s industrial base has

increased and with it a greater demand on coal, its primary source of energy. Coal supplies an estimated seventy-five percent of the country's energy requirement.^[6] As such, coal-burning power plants and coal use for home heating contributed to seventy percent of the smoke and dust in the air and ninety percent of sulfur dioxide emission.^[7] The sulfur dioxide emissions have led to acid rain that has not only affected China (thirty percent of the country is covered by acid rain^[8]), from poor air quality to reduced agricultural production, but Taiwan, Japan and Korea. Furthermore, behind the US, China is the second leading producer of carbon dioxide the most prevalent greenhouse gas.^[9]

China has placed considerable emphasis on reducing the air pollution caused by coal burning through the development of clean coal technology, clean combustion technology and with the collection of sulfur dioxide emission fees. Assistance from developed countries, specifically the US, with needed technology transfer would help accelerate China's progress. China would also benefit from assistance in developing new sources of energy to include, nuclear power, hydroelectric power, solar energy and geothermal power.

The Chinese government is relying on the Three Gorges Dam project, the largest hydroelectric project in the world, to provide a clean source of energy in an effort to reduce the country's reliance on coal. However, there is great skepticism over the degree to which the dam will lessen reliance on coal. Estimates indicate that

the dam will likely provide no more than twenty percent of the electricity generated by the year 2010.[\[10\]](#)

A move toward increasing the number of nuclear power plants, two of which are in operation with an additional twenty planned for operation by 2020, would likely provide less than ten percent of China's energy needs.[\[11\]](#) To make any measurable progress in reducing emissions of carbon dioxide and sulfur dioxide, China needs to reduce "...coal's portion of the energy mix from seventy-five percent to sixty percent by 2010."[\[12\]](#) Therefore, experts indicate that China cannot hope to adequately reduce its dependence on coal and must find more efficient ways to burn coal.

China is also addressing carbon monoxide pollution from vehicular emissions. Forty percent of the cars and seventy percent of the taxis surveyed in Beijing do not meet basic emission standards. Emphasis has been placed on the transition to unleaded fuel, use of catalytic converters, and the elimination of older cars. The current goal is to prohibit the manufacture, import and sale of leaded fuel (date to be determined), to implement annual emissions checks, and to have all cars comply with 1990s versus 1970s emissions technology.[\[13\]](#)

In an international context, China's bid for hosting the 2008 Olympics has provided considerable impetus to clean up the air pollution in Beijing, one of the most severely polluted cities in the world.[\[14\]](#)

Ecological Systems: China's ecological system ranges from equatorial rain forest to frozen ground regions and from ocean chains to grassland.^[15] Environmental pollution has severely contaminated ecological systems and harmed various wildlife and plant life. Fifteen percent of the fauna and flora are endangered, well above the world average of ten to fifteen percent.^[16] China is known to have the most diverse species of birds, fish and plants.

To protect its diverse ecological system, China has established a number of programs that address wetlands conservation, species protection, and natural reserves construction. However, without tangible improvements to water and air pollution, these diverse systems will continue to be threatened by contamination. There is also concern that the Three Gorges Dam project will destroy the natural habitats of a number of indigenous wildlife, to include the Chinese alligator, white crane, the river dolphin, and the prehistoric Chinese sturgeon.^[17]

Regional and International Impact.

As previously noted, China's environmental problems have already had cross-border effects. Air pollution caused by the burning of soft coal has led to acid rainfall in Japan, Taiwan and the Koreas. There is also evidence of global warming that is attributed to China's greenhouse gas emissions. China's environmental pollution affects the economies as well as environments of other nations, through loss of revenue from damage to crops and through the redirection

of funds to repair environmental damage. There is the potential for regional instability if China's burgeoning environmental problems continue to escalate damage to regional neighbors—economically and environmentally.

China's Environmental Program.

Since the early 1970s, China has implemented an ambitious program to address its environmental problems. The Environmental Protection Law, passed in 1979, "...established the basic principles for coordinated development between economic construction, social progress and environmental protect, and defined the rights and duties of governments at all levels..."^[18] In 1984 the National Environmental Protection Agency (NEPA) was formed and tasked with implementing domestic laws, regulations, and a system to address compliance, in addition to implementing the requirements of international agreements. The State Environmental Protection Administration (SEPA), formally NEPA, was upgraded to a ministerial position in 1998 to further highlight the importance of promoting and enforcing sound environmental programs and practices. SEPA has the authority to enforce compliance through a number of measures from levying fines for non-compliance to emissions standards to civil and criminal punishment for causing environmental injuries. However, compliance and enforcement has been difficult to achieve for several reasons.

The Challenges of Compliance. Although there is a structure in place to address

environmental protection and enforcement at the national, provincial, city, and county levels, administration of the program is encumbered by:

- Difficulties in administering a program that consists of hundreds of environment agencies spread across the nation.
- Local-level point of view that environmental enforcement impedes local economic development. An attitude that undermines national environmental protection goals/objectives.
- Lack of sufficient national-level funding to implement stated environmental protection measures, especially at the local-level.
- Lack of sufficient national-level funding to obtain new technologies, i.e. desulfurization equipment and wastewater technologies
- Inconsistencies in monitoring and inspection programs.
- Loss of jobs incurred when polluting industries are closed.

China has focused considerable effort toward reducing industrial pollution, and in the early 1990s implemented an approach to control industrial pollution referred to as the “three changes.” These changes included, “putting prevention first and combining prevention with control, making the causer of pollution responsible for treating it, and intensifying environmental management.”^[19] However, progress has been slow due to the scope of the task and to inconsistencies in enforcement at the local level. Local officials often waive environmental compliance requirements rather than lose opportunities to bring in new businesses and jobs, and/or to retain current businesses. This practice further exacerbates damage to the environment and the government’s efforts toward enforcing compliance.

There have been reductions in the discharge of pollution, to include wastewater,

smoke and dust. However, any measurable progress is impeded by China's current inability to balance economic development and environmental protection, its lack of environmentally sound technologies, and its lack of sufficient funding for environmental protection.

Although China is spending close to \$6.5 billion annually, about 1 percent of GNP, on environmental protection it is well below what is required and below the international norm of 1 to 2 percent. Estimates from Qu Geping, a former head of the SEPA, indicate that to reduce current environmental damage and repair previous damage, "...China should spend 10 percent..." a year.^[20] China has received financial and technological assistance from the international community, to include bilateral and multilateral agreements (i.e. Kyoto Protocol), and loans from the World Bank, International Monetary Fund, and various Export-Import (EXIM) banks. In 1999, the World Bank approved a \$16 million loan and a \$30 million credit to improve water quality.^[21] Also in 1999, the United Nations and the US agreed to help fund a \$25 million program to develop wind and solar projects.^[22] The World Bank and the Global Environmental Facility have also targeted multilateral financial assistance to improve the efficiencies of boilers and power plants.^[23] (Note: Many of these loans require compliance to environmental protection standards, such as the US EXIM Bank support for a power plant in China, which requires an Environmental Assessment).

Unfortunately, no amount of financial assistance and technology is going to solve this China's environmental woes until China strikes a balance between economic development and environmental protection. This is the greatest challenge facing China in the 21st century. To continue its path of economic development, toward achieving status in the global market and improving domestic standards of living, China needs to develop a program that enforces compliance to environmental protection laws and regulations and that stresses the following:

- A clear tie between economic development actions and environmental protection measures. For example, imposing a requirement that makes it mandatory for all new power plants to have clean energy equipment and to comply with set emissions standards.
- Vigorous acquisition of new technologies for cleaner and more efficient use of coal in industry and household uses. To include the transition to natural gas or other clean sources of energy.
- More aggressive pursuit of alternate sources of energy, to include nuclear power, hydroelectric power, natural gas, and solar energy.
- Greater financial assistance to aid local governments in pursuing environmental protection measures and compliance.
- Promotion and standardization of wastewater treatment at all levels of government.

The success of China's efforts at improving its environmental situation will continued to be impeded its primary focus on economic development.

REGIONAL AND INTERNATIONAL ORGANIZATIONS AND AGREEMENTS

As previously noted, China actively participates in a number of regional and international environmental agreements. These agreements have provided a framework and the financial assistance to improve key areas affected by environmental degradation, such as clean air and clean water initiatives. Some of the key agreements include:

- Kyoto Protocol on Climate Change - Designed to reduce greenhouse gas emissions by establishing emission targets and through the transfer of new technologies to developing countries.
- Montreal Protocol - Targeted efforts at reducing substances that deplete the ozone layer. China tied its participation to obtaining foreign financial assistance and technology needed to achieve stated reductions.
- US-China Forum on Environment and Development.
- Joint Communiqué on the 21st Century Environment Cooperation (China and Japan).
- Proposal on Energy and the Environmental Cooperation (China and US).
- Agreement on Environmental Cooperation (China and Sri Lanka).
- Framework Declaration on the 21st Century Environmental Cooperation (China and Canada).
- Memorandum on Environmental Cooperation (China and United Kingdom).

The number and scope of these agreements places a heavy burden on the SEPA to administer and enforce the myriad conditions of these agreements while trying to implement economic reforms. Although SEPA has been given the authority for overall environmental protection, its success will largely depend on

its ability to get local-level agencies on board with compliance and enforcement.

As previously mentioned, this is not an easy task when the livelihood of local governments is often tied directly to the source of the pollution.

US NATIONAL INTERESTS

The Clinton administration's vision of the Pacific linked "...security interests with economic growth and (US) commitment to democracy and human rights."^[24] With respect to China, US goals revolve around "fully integrating China into the global, market-based economic and trading system."^[25] The US government has supported this stance by bestowing Permanent Normal Trade Relations status on China and supporting China's entrance into the World Trade Organization (WTO). These goals and actions drive China to maintain steady economic development, which requires China to continue to expand its industrial base, and under current conditions, further degrade the environment.

When determining how to formulate policy toward China, US policymakers have to keep in mind that "...environmental perils oversea can pose long-term dangers to Americans' security and well-being."^[26] US prosperity and economic well-being is tied to China's economic development and its environmental well-being. With regard to China, continued environmental degradation has the potential to cause domestic, regional and international

turmoil—economically and environmentally. As such, it is in the best interest of the US to remain actively engaged in helping China improve its environmental situation.

US Environmental Diplomacy.

The Clinton Administration placed considerable emphasis on working with China on environment issues as evidenced by the establishment of the US-China Forum on Environment and Development in 1997. The Forum, co-hosted by the US Vice President and China's Premier, is intended to enhance cooperative efforts toward global environmental protection. To date, the Forum has met twice and developed a number of agreements, which are under negotiations, to include:

- A Memorandum of Understanding (MOU) to accelerate deployment of clean US technologies focused on energy efficiency and the reduction of pollution.
- A Statement of Intent on a Cooperative Study of Natural Gas Utilization—a cleaner source of energy.
- An MOU for the joint development of a natural gas pipeline.
- A Statement of Intent on Cleaner Air and Cleaner Energy Technology Cooperation, focused on energy efficiency improvements in industrial coal-fire boilers; clean coal technology; high-efficiency electric motors, and grid-connected wind electric power.[\[27\]](#)

To continue to strengthen ties with China, especially in light of the 1999 accidental

bombing of the Chinese Embassy in Belgrade, and initial concerns about the Bush Administration's harder line on Iraq, the Bush Administration would be best served by continuing cooperative endeavors such as the Forum, and offer more tangible assistance through formalizing a number of the pending agreements developed at the last Forum.

In May 2000, the United States and China issued a joint statement on environment cooperation efforts. The statement reiterated the sentiments of the 1997 and 1999 Forums. More concrete actions are required; dialogue alone is not going to improve the environment. As a follow-up to the last Forum, the US government needs to continue to pursue a policy of environmental engagement by providing assistance with technology transfer, with support of China's position in the international community with regard to grants and loans toward environmental improvements. The US can act on the opportunity presented by a new administration to reach out and through tangible actions, strengthen ties with China and improve the environment.

CONCLUSIONS

The greatest challenge facing China in the 21st century is how to balance economic development and environmental protection. China is the world's fifth largest

trading power; a status achieved through a highly inefficient industrial base that has caused significant domestic and international environmental degradation. Necessary improvements to its environment will not be achieved until China has a program of economic development that fully addresses and implements environmental protection measures. This will be a significant challenge as China is under considerable pressure, domestically and internationally, to continue to pursue economic development.

Entry into the WTO, in addition to the myriad of international agreements, provides China another opportunity to obtain environmentally sound technologies and expand its economic development using cleaner energy sources.

The Bush Administration has a solid opportunity to enhance relations with China, improve the global environment, maintain stability among regional nations in the Pacific, and maintain access to markets by remaining actively engaged in efforts initiated by the Clinton administration, specifically, the US-China Forum on Environment and Development and China's entry into the WTO.

Annex A:

QUESTIONS

1. How does China balance economic development with environmental protection?
2. What is the needed mix of energy sources and at what levels to provide a cleaner energy source (i.e. nuclear power, natural gas, hydroelectric power)?
3. What level of GNP spending is required to sufficiently address environmental protection?
4. What role, if any, is desired of the US toward environmental protection?
5. How does China view the US's actions/commitment to assisting China with its environmental problems.
6. How does China view the international communities role in helping it implement change?
7. What are China's foreign policy goals with regard to the US?

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